

# THE AUDITOR CERTIFICATION SCHEME FOR DRINKING WATER RISK MANAGEMENT IN AUSTRALIA – THE VICTORIAN EXPERIENCE

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## ABSTRACT

The Department of Human Services (Victoria) engaged the international personnel and training certification body, RABQSA International, to develop a Drinking Water Quality Management System Auditor Certification Scheme. This Australia-wide scheme, launched in April 2007, is the first of its kind in the world and fills an essential role in training requirements of professionals servicing the water industry.

This paper explains how this auditor certification scheme has evolved in the two years since being developed, providing details on what it entails and what has been learned along the way. The paper also outlines what has been discovered about the skills and knowledge gaps that need to be filled in order to continue to protect public health in the area of drinking water quality risk management, in particular in relation to the importance of documentation and the integration of risk management plans into water supplier operations. The outcomes of regulatory audits of risk management plans for drinking water quality that were conducted in Victoria in 2008 are also discussed and summarised, from a regulator's perspective.

## INTRODUCTION

Increasingly, water suppliers in Australia employ catchment to tap risk management plans as the cornerstone of strategies to ensure the safety and quality of the drinking water they supply to the public. This approach is endorsed by water industry guideline documents such as the "Australian Drinking Water Guidelines" [NHMRC, 2004] and a range of World Health Organization publications.

One of the most important ways for practitioners, regulators and the public to be assured that these plans are developed and implemented effectively is to incorporate audits into the management process.

But some key questions arise:

- Who is suitably skilled to do such audits?
- How should potential auditors be assessed?
- Who can provide the training for individuals to the expert level expected of auditors? and
- What kind of things would such audits reveal about the management and quality of drinking water in Australia?

These problems have been examined by the Department of Human Services in Victoria, in its role as regulator of the quality of drinking water supplied in that state, in conjunction with peak Australian and Victorian water industry bodies.

## REGULATORY FRAMEWORK IN VICTORIA

Water businesses involved in the delivery of drinking water in the state of Victoria, Australia, are regulated by the *Safe Drinking Water Act 2003* (the Act) and the *Safe Drinking Water Regulations 2005*. Under the Act, which came into operation on 1 July 2004, water businesses that supply drinking water or regulated water to the public are defined as water suppliers. Water businesses that do not supply drinking water to the public but supply water to water suppliers are water storage managers. Under the Act, "regulated water" is water that is not intended for drinking but which could reasonably be mistaken as being drinking water.

The Act requires water suppliers to supply drinking water that complies with specified standards, based on key guideline values in the "Australian Drinking

Water Guidelines". It also requires that drinking water not contain any algal toxin, pathogen, substance or chemical in such amounts that may pose a risk to human health. The Act also requires water suppliers to prepare, implement and review risk management plans for their supplies of drinking water and regulated water and for water storage managers to prepare, implement and review risk management plans for their supply water to water suppliers.

The Act and Regulations, taken together, set out the mandatory content of risk management plans. These elements are based on the most significant aspects of the twelve point Framework for Management of Drinking Water Quality contained within the "Australian Drinking Water Guidelines". Water suppliers and water storage managers were required to develop their risk management plan by 1 July 2005.

The Act also empowers the Secretary to the Department of Human Services, or their delegate, to require that a water supplier or water storage manager have their risk management plan audited. The Act also stipulates that the audits must be carried out by auditors approved by the Secretary, with the experience, qualifications and skills necessary to independently conduct audits of the risk management plans.

This is one of the most important philosophical aspects of the regulatory framework, as it directly assesses, under audit, the risk management activities and capabilities of the water corporation rather than the day to day quality of the drinking water supplied.

#### SCHEME DEVELOPMENT PROCESS

Implementation of this key aspect of the Victorian legislation required the existence of a suitable training and accreditation process for auditors before the audit component could be undertaken.

The Department found, when this was first examined in 2005, that there were no suitable pre-existing auditor certification schemes for drinking water risk management plans. At the same time, the Water Services Association of Australia, the peak body of the Australian urban water industry, needed to assess the appropriateness of auditors

using its audit tool Australia-wide. Both parties concluded that there was no point having two parallel auditor certification schemes operating in a small market such as Australia, nor was there any benefit in developing a scheme customised for the regulatory framework of any individual jurisdiction.

Consequently, a certification scheme for Drinking Water-Quality Management System Auditors was developed through a collaborative process involving the Department of Human Services, the Water Services Association of Australia, the Victorian Water Industry Association and RABQSA International, an international personnel and training certification body with offices in Sydney.

The national "Drinking Water Quality Management System (QMS) Auditor Certification Scheme" was launched in April 2007.

This is a competency-based scheme, whose purpose is to assist drinking water service providers and regulators in selecting auditors and to provide certification and business opportunities to individuals who wish to pursue this avenue of business. The Department chairs a scheme committee which oversees the development and policy attributes of the scheme.

One of the attractions of the scheme to the Department is that, once established, it is independently managed by RABQSA International, a JAS-ANZ accredited personnel certification body. The scheme is not tied to individual state-based legislative requirements, with key competencies for auditors being based on ISO 19011-2002 and chapters 2 and 3 of the "Australian Drinking Water Guidelines" [NHMRC, 2004].

It is, as far as the author and scheme committee have been able to ascertain, the first such scheme worldwide. As such, it has attracted considerable interest from international agencies active in the field of drinking water quality risk management.

#### SCHEME DETAILS

At the moment, the scheme certifies individuals as either auditors or lead auditors, under the scope of drinking water quality risk management processes.

The difference between auditor and lead auditor certification is that the latter also requires demonstrated competence in leading management system audit teams. The required competence in auditing and knowledge of drinking water quality risk management is the same.

Certification as an auditor requires the demonstration of knowledge competency, covering both conducting audits and knowledge of drinking water quality risk management, appropriate educational qualifications, relevant work experience, suitable personal attributes and demonstration of skill competency, through conduct of an audit on a drinking water supplier.

At this stage, essential pre-requisites are a degree or diploma in engineering, science or medicine recognised in Australia, with at least seven years accumulated work experience in two of the following three areas:

- Water industry, either working in the industry or consulting to it;
- Experience in establishing, reviewing or running quality management systems;
- Experience in auditing quality management systems.

Quality management systems includes QMS, EMS, Risk Management or HACCP based systems.

One of the essential competencies is knowledge of drinking water systems and risk management practices as they apply to drinking water systems in Australia. This involved demonstrated understanding of the Framework for Management of Drinking Water Quality set out in chapters 2 and 3 of the "Australian Drinking Water Guidelines". To do this, candidates must sit a 2.5 hour short question style written exam at RMIT University in Melbourne. The results are assessed by RMIT, with results recorded on certificate as Pass or Fail. There have been five sittings in total, between May 2007 and the end of 2008, with 45 candidates in total being assessed. Exams are normally scheduled six-monthly.

Certification applies to individuals anywhere in Australia, rather than corporations, with specific components reassessable after two and four years. The results for individual competency units are valid for three years. This means that, in general,

potential auditors can go through the certification process at their own pace. Prior knowledge and experience can be considered in the process.

As at the end of 2008, the scheme has certified eleven auditors in Australia, including five lead auditors. A further eight candidates are progressing towards certification.

## REGULATORY AUDITS IN VICTORIA

For the regulatory audits in Victoria, a water business wishing to engage an auditor must apply to the Department of Human Services for approval, providing details of the auditor's RABQSA certification and declaring any potential conflicts of interest (for example an auditor cannot audit a risk management plan which they have developed or reviewed). If approved, the Department provides written confirmation of approval of the auditor, the risk management plan they are approved to audit, the duration of the approval and any conditions imposed on the approval. Seven auditors were approved in total in 2008 for the regulatory audits.

The first round of audits covered the period January 2006 to December 2007 and were undertaken between May and September 2008.

Auditors were required to assess the risk management plan for each water business, and to determine:

- whether the plan has been prepared in accordance with the requirements of the Act and the Regulations;
- whether the plan had been implemented and complied with;
- whether the plan had been reviewed and, where appropriate, revised;
- whether the risk management plan adequately identified the nature and level of hazards and risks for each of the water supply systems covered in the scope of the audit; and
- whether the control measures identified in the risk management plans were in place operationally and were adequate to reliably control the identified risks.

A total of 25 water businesses were audited, comprising three metropolitan Melbourne suppliers, thirteen regional water suppliers, three water storage managers, five alpine resort management boards and Parks Victoria.

Overall, the audits found that fifteen of the 25 water businesses were compliant with the requirements of the Act. Large, well-resourced water suppliers were generally found to be compliant. Small water suppliers, or water businesses whose core activity has not traditionally been the supply of drinking water, were more likely to be found to be non-compliant. Water suppliers with drinking water supplies that did not comply with the water quality standards were also more likely to be found under audit to have not complied with risk management plan obligations.

Reasons for non-compliance with the auditable elements principally related to the adequacy of the risk management plan and the degree and depth of implementation of the plan. In some instances risk assessment and management processes appeared to have been carried out in a satisfactory manner, but documentation of these activities and subsequent decision-making processes was inadequate. Poor integration of risk management plans for water storage managers and corresponding water suppliers was also noted in audits with non-complying results.

Audits that found the business was compliant with the legislation also identified a range of continuous improvement opportunities.

As far as the first year of the regulatory audit process was concerned, this was regarded as a very pleasing result, from a regulator's perspective. It demonstrated that the audits were pitched at a level that matched current industry best practice, yet identified some realistic yet challenging stretch targets for water suppliers that were not yet at that best practice standard of operation.

It is hoped that the audit process will help promote water quality improvements and drive culture change towards the proactive approach to risk management embodied in the Framework in the "Australian Drinking Water Guidelines". Involvement of operators in developing and implementing risk management plans was seen to be a key feature in successful transition to the new

approach. Anecdotal evidence indicates that incident response processes have become more rapid and effective since introduction of the regulatory changes.

The Department also conducted a round of post-audit workshops in late 2008, to obtain feedback from the auditors and the Victorian water industry on the findings from the first round of audits. These workshops provided valuable feedback and reinforced the approach the Department adopted in administering the audits. This element of the program is a key for continuous improvement, thus maintaining the robustness of the process.

Overall the Department was satisfied with the conduct of the first round of audits and the consistency of audit findings between different auditors. Water businesses which were found to be non-compliant at audit have entered into formal undertakings with the Department, to carry out corrective actions to rectify the identified problems. In addition, those businesses which were compliant at audit have been requested to specify how they will address opportunities for improvement which were identified by the audit.

In keeping with the public reporting requirements of the Act, water suppliers and water storage managers who completed their audit before 1 July 2008 were required to publish the outcome of the audit in their annual water quality report for 2007/08.

A summary of the pre-1 July 2008 audit findings is also presented in the Department of Human Services' Annual Water Quality Report for 2007/08, tabled in Parliament in Victoria in early 2009. The remaining audit results will be discussed in detail in the 2008/09 annual water quality reports, although some of them have already been disclosed in a number of water supplier's 2007/08 annual reports.

## DISCUSSION – FUTURE CHALLENGES

The experience in running the scheme for the past two years and running the first round of regulatory audits in Victoria generates an appreciation of future challenges, both for the scheme and auditing drinking water quality risk management in general terms.

Future challenges for the scheme principally revolve around streamlining the certification process for candidate auditors, enabling simpler communication between candidates and water businesses and increasing the number of certified auditors in Australia.

One of the most significant knowledge gaps that appears to be evident is in the skill sets of candidate auditors, when compared to the requirements of a rapidly evolving set of challenges in the water and training industries. The experience from running the exam indicates that the most common gap in the skill set of candidate auditors who do not pass the exam lies in understanding the importance of documentation in risk management plans.

A secondary concern is that there does not appear to be much historical development of training courses for individuals interested in pursuing work in this area. Opportunities exist for the development and application of short courses by certified training providers that are tailored to water industry needs on documentation and auditing for drinking water quality risk management plans.

Over the last few years, the scheme has been most active in Victoria, given that this is where most of the demand for drinking water quality risk management plan auditors has originated. There is likely to be increased demand for auditors in NSW and Queensland, as a result of regulatory developments on those states that mandate the use and audit of drinking water quality risk management plans, after 2009 and 2011 respectively. Other jurisdictions in Australia are also examining the use of such auditors. This means that the scheme must adapt to meet the needs of states adopting it. The way that the scheme is marketed to candidate auditors and regulatory agencies outside Victoria also needs to evolve with changing circumstances.

Significant growth opportunities are likely to lie in the future need for certified auditors of risk management plans for:

- Validation of recycled water and/or drinking water treatment processes, prior to commissioning; and

- Auditing of recycled water schemes that supply water for non-potable purposes, either to residential, agricultural, municipal, or industrial uses.

The current scheme has the potential to provide a structure within which skill sets for these new scopes can be assessed and, ultimately, certified.

The scheme committee is already examining these challenges. It is anticipated that the scheme will be revised later in 2009. For those interested in this scheme, its operation, or the training or risk management issues it is seeking to examine, please do not hesitate to contact the author or the Drinking Water Regulatory Section of the Department of Human Services, Victoria, as below.

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#### FURTHER INFORMATION

*Safe Drinking Water Act 2003 (Vic)*  
*Safe Drinking Water Regulations 2005 (Vic)* –  
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[www.health.vic.gov.au/environment/water/drinking.htm](http://www.health.vic.gov.au/environment/water/drinking.htm)

Drinking Water QMS Auditor Certification Scheme  
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